

ABSTRACT

An optical imaging system and method for achieving a large depth of field without decreasing the relative aperture of an imaging lens. The imaging system has a light source for sequentially illuminating an object to be imaged with light of different ones of a plurality of wavelengths, and an imaging lens that has a focal length that varies with the wavelength of the light that illuminates the object. For each wavelength of light by which the object is illuminated, the imaging lens will image a different object plane onto an image receiving unit, and the image receiving unit will capture one well-focused, high resolution image of the object.